

Selection on Observables and Bias from Unobservables: With Applications to the School Choice Literature

This course has two objectives. The first is to provide an overview of empirical evidence on two key issues that determine the merits school choice programs. The focus will be on estimates of the effectiveness of schools and estimates of the “cream skimming effect” of school choice on students who remain in the existing schools. The second objective is to discuss new estimators of treatment effects based on formally modeling how observed variable and unobserved variables are related. The new approaches will be placed in the context of informal checks for selection and omitted variables bias that researchers routinely use.

Lecture 1. *Sample Selection Bias and Studies of the Effectiveness of Private schools*

- a) Introduction to the lectures
- b) Regression, Instrumental Variables, and Regression Discontinuity Approaches to Measuring School Effectiveness
- c) Basic Results
- d) Informal Use of Selection on the Observables to Assess Bias from Omitted Variables, Selection, and Invalid Exclusion Restrictions
- e) The Theoretical Foundation for Using the Degree of Selection on Observables to Assess Bias from Unobservables

Lecture 2. *Estimation Methods and Results*

- a) Using Selection on Observables to Obtain Bounds on the Effectiveness of Private Schools
- b) Other Applications of the Methods: Assessing the Effectiveness of Medical Procedures
- c) Recent Estimation Methods: Interval Estimation Based on a Formal Model of Observed and Unobserved Covariates

Lecture 3 : Issues in Evaluating of School Choice Reform

- a) The Effects of Competition on Public School Performance
- b) A Theoretical Framework for Assessing the Cream Skimming Effect of School Choice
- c) Evidence on the Cream-Skimming Effect.

Readings:

Joseph G. Altonji, Todd E. Elder and Christopher R. Taber, "Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools" The Journal of Political Economy, Vol. 113, No. 1 (February 2005), pp. 151-184

Joseph G. Altonji, Todd E. Elder, Christopher R. Taber, "An Evaluation of Instrumental Variable Strategies for Estimating the Effects of Catholic Schooling", Journal of Human Resources Vol. 40, No. 4 (Autumn, 2005), pp. 791-821

Joseph G. Altonji, Todd E. Elder and Christopher R. Taber, "Using Selection on Observed Variables to Assess Bias from Unobservables when Evaluating Swan-Ganz Catheterization", American Economic Association Papers and Proceedings, (May 2008): 345-350.

Joseph G. Altonji, Ching-I Huang and Christopher R. Taber "Estimating the Cream Skimming Effect of School Choice," NBER Working Paper No 16579, December 2010, <http://www.nber.org/papers/w16579>

Evans, William N., and Robert M. Schwab, "Finishing High School and Starting College: Do Catholic Schools Make a Difference?" Quarterly Journal of Economics, 110 (1995), 947-974.

Ferreira, Maria Marta, "Estimating the Effects of Private School Vouchers in Multi-District Economies," American Economic Review, 97(3) (June 2007):789-817.

Hoxby, Caroline M., "School Choice and School Productivity. Could School Choice be a Tide that Lifts All Boats", in The Economics of School Choice, C.M. Hoxby (editor), University of Chicago Press (2003): 287-342.

Neal, Derek, "The Effects of Catholic Secondary Schooling on Educational Attainment," Journal of Labor Economics 15 (1997), 98-123.

Paul Rosenbaum, "Covariance Adjustment in Randomized Experiments and Observational Studies", Statistical Science, Vol. 17, No. 3 (Aug., 2002), pp. 286-304

Rouse, Cecilia and Lisa Barrow, "School Vouchers and Student Achievement: Recent Evidence, Remaining Questions" Annual Reviews of Economics, (September 2009):17-42.